

Relationships of Family Resilience and Nutritional Behavior to Prevent Stunting in the District of West Bandung

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ABSTRACT

OBJECTIVE: This study aimed to determine the relationship between family resilience and nutritional behavior to prevent stunting in the District of West Bandung.

METHODOLOGY: The design used in this study was cross-sectional with a cluster-proportional sampling method. The sample was of mothers with children aged 6-24 months living in West Bandung Regency, totaling 124 respondents. Data collection from July to August 2023 used the BKKBN Family Resilience Index questionnaire to determine family resilience and secondary data from health centres in West Bandung Regency to assess stunting prevention. Statistical analysis used Spearman's rho.

RESULTS: The results showed that 50.8% of family resilience was in the poor category, and 49.2% was in the sufficient category. For the nutrition behavior variable, 53.2% were in the poor category, and 46.8% were in the good category. Bivariate analysis showed that family resilience was significantly associated with stunting prevention ($p=0.000$), and nutritional behavior was also significantly associated with stunting prevention ($p=0.000$). The strength of the relationship was also found to be 0.403 and 0.416 for the variables of family resilience and nutritional behavior towards stunting, respectively, which means that the strength of the relationship is moderate and the direction of the relationship is positive.

CONCLUSION: Family resilience and nutritional behavior have a significant and positive relationship with stunting prevention in West Bandung Regency. Intervention stunting should start as early as possible and requires cooperation with all elements of government and society.

KEYWORDS: Family, Feeding Behavior, Resilience, Stunting

INTRODUCTION

Stunting is a chronic nutritional problem caused by a deficit in nutritional intake over a long period, which can disrupt a child's growth and development. In 2021, the United Nations Children's Fund (UNICEF) reported that more than 149 million children under the age of 5 in the world were stunted. The Indonesian Nutritional Status Survey (SSGI) also found that the national stunting rate decreased by 2.8% from 24.4% in 2021 to 21.6% in 2022¹. Based on SSGI 2022, the prevalence of stunting in West Bandung Regency reached 27.3%, which decreased by 2.3% compared to the previous year, which was 29.6%¹. The prevalence of stunting in West Java in 2022 is 20.2%, better than the national average¹.

The high stunting rate is caused by several causes, divided into three levels: the individual, the family or household, and the community. At the individual level, the causal factors are a history of infectious diseases, low birth weight, maternal nutritional status during pregnancy, nutritional intake, birth weight, and health conditions. The causes at the family level include the quality and quantity of food, family resources,

parenting patterns, health care, family resilience, and the economic level. At the community level, the causes are inadequate health services, environmental cleanliness, limited clean water, and environmental factors, including socioeconomic infrastructure, healthcare facilities, and education².

Stunted children are constrained in achieving optimal quality of life. The impact of stunting is stated in the WHO framework as short-term and long-term consequences. Regarding the factors causing stunting, the family is an element that can directly influence the health status of individuals, especially children³. Factors directly and indirectly influencing stunting include nutrition and family or household resilience⁴. Family resilience develop creative strategies to ensure their children receive adequate nutrition, such as pooling resources with extended family or utilizing community support⁵.

Poor nutritional behavior can affect a child's growth and development, which is the beginning of stunting. Therefore, the family is a crucial factor in health, especially in meeting nutritional needs to prevent stunting⁶. According to Frankenberger in the Development of Family Resilience from BPS, family resilience is a condition when families have adequate access to income and resources to meet basic needs such as food, housing, clean water, educational opportunities, health services, social integration, and time to participate in society on an ongoing basis⁷. Based on this phenomenon, an additional targeted

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study is required to ascertain the connection between nutritional behavior towards childhood stunting and family resilience, encompassing child health care, sanitation, and health education. This study's primary goal is to determine how family resilience and nutritional behavior are related to stunting prevention in the District of West Bandung.

METHODOLOGY

Study Design

The design used in this study is a cross-sectional approach.

Population and Sample

This study involved mothers with children aged 6–24 months in West Bandung District. Using cluster-proportional sampling, 124 respondents were selected from 20 stunting-locus villages. Data collection took place from July to August 2023.

Instruments

The Family Resilience Instrument used in this study came from the Ministry of Women's Empowerment and Child Protection. The Nutritional Behavior Questionnaire was adopted from Utami's research (2016) and modified according to UNICEF's Extended Model of Care (2004). The questionnaire consisted of 32 questions, each item of which was measured using a Likert scale, namely "always," "often," "sometimes," or "never. The researcher used secondary data from health centres in stunting loci in West Bandung Regency to determine stunting status in children aged 6-24 months. The validity test of the food security instrument showed a range of values between 0.273 and 0.730, while for nutritional behavior, the range was between 0.287 and 0.648. The reliability test showed that the family resilience instrument had a reliability coefficient of 0.809, while for nutritional behavior was 0.822.

Data analysis

Univariate and bivariate analysis with Spearman's rho processed through SPSS.

Ethical Statement

The Research Ethics Commission of Universitas Padjadjaran has approved this research with Ethics Letter No. 844/UN6.KEP/EC/2023.

RESULTS

Respondent Characteristics Based on Demographics

A single table in this analysis explains the respondent data. Respondent data is required to determine the respondents' backgrounds and provide information to help interpret the study's findings.

Based on the analysis of **Table I**, data was obtained that the average age of children was 16.6 months, and the 95% interval estimate was in the range of 15.56-17.56 months.

Table II presents respondent characteristics. The study shows 46.8% male and 53.2% female respondents. Less than half of household heads (44.4%) and mothers (41.9%) had a high school education. Most household heads (45.2%) were self-

employed, while 83.9% of mothers were housewives. The majority (79%) had a monthly income below Rp. 3,250,000.

Regarding family resilience, most respondents had low legality and integrity (75%), physical resilience (77.4%), economic resilience (63.7%), and social psychological resilience (68.5%). However, 92.7% had sufficient socio-cultural resilience. Overall, half of the families (50.8%) had low family resilience. In nutritional behavior, 53.2% showed poor behavior, while 46.8% exhibited good behavior.

Table I: Respondent Distribution Based on Child Age (n=124)

Variable	Mean	Min - Maks	Standard Deviation	CI 95%
Child Age	16,6	6-24	5,375	15,56-17,56

Table II: Frequency Distribution of Respondents Based on Family Characteristics and Child Characteristics (n=124)

Characteristics	f	%
Family Characteristics		
Head of Household's Last Education		
Elementary School	20	16.1%
Junior High School	40	32.3%
Senior High School	55	44.4%
Higher Education (Diploma/Bachelor/Master/Doctorate)	9	7.3%
Mother's Last Education		
Elementary School	30	24.2%
Junior High School	31	25.0%
Senior High School	52	41.9%
Higher Education (Diploma/Bachelor/Master/Doctorate)	11	8.9%
Head of Household's Occupation		
Unemployed	8	6.5%
Entrepreneur	21	16.9%
Private Employee	39	31.5%
Other	56	45.2%
Mother's Occupation		
Housewife	104	83.9%
Entrepreneur	2	1.6%
Private Employee	11	8.9%
Other	7	5.6%
Family Income		
3,250,000/month or more	26	21%
Less than 3,250,000/month	98	79%
Child Characteristics		
Child's Gender		
Male	58	46.8%

Female	66	53.2%
Child's Nutritional Status		
Severe Malnutrition	1	0.8%
Underweight	16	12.9%
Good Nutrition	99	79.8%
Risk of Overnutrition	7	5.6%
Overnutrition	1	0.8%
Family Resilience		
Legal and Family Integrity		
Poor	93	75.0%
Sufficient	31	25.0%
Physical Resilience		
Poor	96	77.4%
Sufficient	28	22.6%
Economic Resilience		
Poor	79	63.7%
Sufficient	45	36.3%
Social Psychological Resilience		
Poor	85	68.5%
Sufficient	39	31.5%
Social Cultural Resilience		
Poor	9	7.3%
Sufficient	115	92.7%
Family Resilience		
Poor	63	50.8%
Sufficient	61	49.2%
Nutritional Behavior		
Poor	66	53.2%
Good	58	46.8%

Table III shows the characteristics of respondents based on stunting. The research results show that most respondents (75.81%) did not experience stunting. The minority of respondents who experienced stunting were 30 (24.19%). Most male toddlers did not experience stunting, 48 people or 81.36%, and more female toddlers did not experience stunting, 46 or 69.7%.

Table III: Stunting Incidents by Gender

Gender of Toddlers	Stunting Incidence				Total
	Stunting		Not Stunting		
	N	%	N	%	
Male	11	18.64%	48	81.36%	59
Female	19	29.23%	46	70.77%	65
Total	30	24.19%	94	75.81%	124

Relationship between Family Resilience and Nutritional Behavior to stunting prevention

The analysis in Table IV shows a significant relationship between family resilience and stunting prevention (p-value = 0.000) and between nutritional behavior and stunting prevention (p-value = 0.000). The correlation coefficients (0.405 and 0.416) indicate a strong positive relationship, meaning better family resilience and nutritional behavior are associated with lower stunting risk.

Table IV: Relationship between Family Resilience and Nutritional Behavior to stunting prevention

Variable	Percentage	p-value	Correlation Coefficient
Family Resilience			
Poor	63 (50,8%)	0.000	0.405
Sufficient	61 (49,2%)		
Good	0		
Nutritional Behaviour			
Poor	66 (53,22%)	0.000	0.416
Good	58 (46,78%)		

DISCUSSION

The analysis results show that the relationship between family resilience and stunting prevention has sufficient strength and a positive relationship with a p-value = 0.000, which means that the better the family resilience, the higher the standard deviation indicating normal nutritional status (not stunting). These results align with the research of The Midlands the Family Study, which states that families with low resilience are at risk of experiencing food insecurity⁸. Another study in Jember found that implementing family roles had a significant relationship with stunting prevention⁹. The research in Jambi shows that 98.7% have a low family resilience category. Stunting prevention in Jambi Province is not directly and significantly influenced by the legal basis, which is the possession of administrative marriage evidence, birth certificates, and family unity, or the physical resilience, which is the possession of a respectable home and separate beds for parents and children¹⁰. Iftikhar examined the situation of parents who live together or apart and found no evidence of a substantial relationship with the children's nutritional health. Another risk factor for stunting is family type¹¹. The legality of family integrity with related indicators in attaining family welfare is one of the characteristics of family resilience. However, a study conducted in Sub-Saharan Africa found that family type also has a significant relationship with stunting prevention and that toddler stunting is significantly correlated with family integrity, as measured by whether or not parents live together¹². The Physical Resilience Dimension in family resilience includes aspects of health, adequate food and nutrition consumed daily, not experiencing chronic diseases or disabilities, and the availability of separate

rooms for children and parents. Dewey's research states adequate food and nutrition significantly affect stunting prevention¹³. Several other studies also noted that poor dietary diversity was significantly associated with stunting prevention¹⁴. In contrast, other studies revealed similar things, such as low nutritional diversity increases the risk of severe stunting¹⁵. Economic resilience includes home ownership by the family, sufficient family income to meet all household needs, the family's ability to finance children's needs and education, and health and financial security for the family. In Kaloko's study, the results showed a relationship between family income and stunting prevention¹, which aligns with Mariska's research in Aceh Jaya, which found that parental income affects stunting. A higher family income will make it possible to purchase more food in more significant quantities and of higher quality. On the other hand, a decline in income will result in less purchasing power for food, both in quantity and quality. High incomes that are not balanced with adequate knowledge will cause people to become very wasteful in their daily eating patterns, such as choosing a food ingredient based more on taste considerations than nutritional aspects¹⁷. This dimension of Social Psychological Resilience is characterized by the absence of domestic violence between parents (husband and wife) or parents with children, which is often a problem in the family. Another indicator is a harmonious family, providing time to do activities together. In addition, compliance with the law is also included in the dimension of social-psychological resilience as a form of family participation in society. In Chilinda's research in Malawi, it was found that the effect of domestic violence on stunting was not significant¹⁸. In contrast, research in India stated that maternal exposure to physical violence was associated with a higher likelihood of stunting in children¹⁹. Meanwhile, regarding violence against children, research in Barbados showed that a history of malnutrition in infants was significantly associated with levels of neglect and physical violence (maltreatment) during childhood²⁰.

The dimensions of socio-cultural resilience are cultural habits adopted, early marriage, daily clean and healthy living habits, and social habits such as participation in social and religious activities in the residential environment, which are also included in socio-cultural resilience. The study's results above align with research in Bone, which states that there is no relationship between socio-culture and stunting prevention²¹. However, the research results are different for clean and healthy living habits. Sulfiana's research shows that clean and healthy living behaviors significantly influenced the reduced risk of diarrhea²². Diarrhea disease affects the decline in nutritional status.

The analysis results show a correlation coefficient

between nutritional behavior and stunting prevention. The results of this study are in line with several other research results. Among them are studies that show a significant relationship between nutritional behavior and stunting prevention²³. Research in Labuhanbatu also shows that nutritional behavior is related to stunting prevention²⁴. Nutritional behavior is influenced by culture, family support, and the mother's knowledge as a caregiver²⁵. Lack of knowledge and misunderstanding of food needs and nutritional value are common in every country. Poverty and inadequate access to nutritious food are important factors contributing to malnutrition. A need for more understanding of nutrition and the practical application of this knowledge partly causes stunting and other nutritional issues²⁶. Pregnant women, nursing mothers, or mothers with toddlers often do not understand their nutritional needs. In addition, it is important to improve knowledge and skills regarding essential foods.

In handling stunting, specific and sensitive interventions cannot be separated. Some sensitive interventions that can reduce stunting prevention are increasing awareness of parenting and nutrition and improving access to nutritious food. In contrast, specific interventions related to direct causes include food intake. Therefore, the behavior of providing nutrition is essential because it is related to both interventions. The Infant and Child Feeding Program is an integrated intervention that applies gold-standard feeding practices for infants and children and has an impact on accelerating the handling of stunting²⁷. In addition, implementing particular interventions such as nutritional counseling and education also showed a significant increase in the knowledge and attitudes of mothers who have stunted children in fulfilling their nutritional needs and demonstrated effectiveness in overcoming stunting.

CONCLUSION

Family resilience and nutritional behavior have a significant relationship to stunting prevention with sufficient strength of the relationship and have a positive relationship that means that the higher the standard deviation indicating normal nutritional status (not stunted), the higher the family resilience and nutritional behavior in children. The family resilience variable has a significant relationship to stunting because most dimensions are related to stunting, such as economic, physical, and socio-cultural resilience. The variable of nutritional behavior is said to have a direct relationship because it is related to nutritional intake in children. Therefore, the better the family resilience and nutritional behavior in children, the better the child's nutritional status.

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AUTHOR CONTRIBUTION

Rahayuwati L: Data curation, Writing - Original draft preparation, Supervision.

Purbandini N: Conceptualization, Methodology, Resources.

Pramukti I: Investigation, Supervision.

Juniarti N: Supervision, Data Curation.

Haroen H: Supervision, Validation.

Sari SP: Supervision, Investigation.

Amelia V: Writing - original draft, Writing- Reviewing and Editing

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